Remarks

In the Office Action mailed February 3, 2005:

1. The claims were denied the benefit of the effective date of the priority document;

2. The disclosure was objected to;

3. The title was objected to;

4. The abstract was objected to;

5. Corrected drawings were required;

6. Claims 4-5 were objected to because of informalities;

7. Claims 1 and 2 were rejected under 35 U.S.C. § 112 ¶ 2 as being indefinite for failing to particularly point out and distinctly claim the subject matter which Applicants regard as the invention;

8. Claim 15 was apparently rejected under 35 U.S.C. § 101;

9. Claim 1was rejected under 35 U.S.C. § 103(a) as being unpatentable over Sagar-SYSCON ("JT Router: Let your clients tunnel their way across the internet") in view of Cathey-AT&T (U.S. Patent No. 5,778,212) and Guedalia-Roxio (U.S. Patent No. 5,535,878);

10. Claim 2 was rejected under 35 U.S.C. § 103(a) as being unpatentable over Sagar-SYSCON, Cathey-AT&T and Guedalia-Roxio, in view of Rueda-Telecom-Research Laboratory (U.S. Publication 2002/0112076);

11. Claims 3 and 5-15 were rejected under 35 U.S.C. § 103(a) as being unpatentable over Sagar-SYSCON, Cathey-AT&T and Guedalia-Roxio, in view of Geagan-Blue-Coat-Systems (U.S. Patent No. 6,735,634);

12. Claim 4 was rejected under 35 U.S.C. § 103(a) as being unpatentable over Sagar-SYSCON, Cathey-AT&T, Guedalia-Roxio and Geagan-Blue-Coat-Systems, in view of "Official Notice"; and

13. Claims 16-23 were rejected under 35 U.S.C. § 103(a) as being unpatentable over Sagar-SYSCON, Cathey-AT&T, Guedalia-Roxio and "Geagon III" (assumed to mean Geagan-Blue-Coat-Systems), in view of "Official Notice".

Note: The Examiner cited "Guedalia et al. 5,535,878 (Hereinafter Guedalia-Roxio)" as a basis for all rejections under 35 U.S.C. § 103(a). However, U.S. Patent No. 5,535,878 is issued to

Kenneth Reed and assigned to Lawson Displays Limited, and is titled "Ring Holder." U.S. Patent No. 5,535,878 is classified in class 206 and appears to be directed to an apparatus for displaying rings. Applicant assumes the Examiner intended to cite U.S. Patent No. 6,535,878.

I.   Examiner's Objections

A.   The specification was amended to insert a paragraph referring to the priority and related applications.

B.   The title was amended.

C.   The abstract was amended.

D.   New Figure 5 is provided, along with a letter to the Official Draftsperson.

E.   Claim 4 was amended to make it clearer that the listener, connection and receiver consumers are *derived* from a single class.

F.   Claim 5 was amended to insert a missing period.

II.   Priority Claim

Applicants reserve the right to rebut at a later time the Examiner's assertion that the claims do not benefit from the effective date of the priority document. It may be noted that, in paragraph 2 of the Office Action, the Examiner identified Application No. 09/828,052 as the priority document; however, the cited application is the application being examined. The priority document is Provisional Application No. 60/195,756.

III.   Sagar-SYSCON (Ajit Sagar, "JT Router: Let Your Clients Tunnel Their Way Across the Internet)

Sagar-SYSCON describes a Java program designed to act as a tunnel for socket communications between an Internet client and a remote server; the client and server roles are implemented in a single process (page 1, lines 22-28; Applicant's numbering of lines in the Sagar-SYSCON text *includes* blank lines).

A.   Sagar-SYSCON Does Not Register Sockets

In a claimed embodiment of the present invention, multiple sockets are registered with a polling module and are polled to determine when events occur at the sockets. A single processor thread may be shared among the registered sockets for the polling.

The Examiner stated that Sagar-SYSCON teaches this aspect of Applicants' invention through the "use of vector having sockets, page 2, lines 25-46." However, Figure 8 (also called Table 2) of Sagar-SYSCON specifies that the JTunnels vector "maintains a list of JTunnels that are running in JTServer." This is expanded upon in the sentences of lines 26-30 of page 2:

> Now that both the Client and Remote Host sockets are available, a new JTunnel is instantiated and opened. This is added to the JTunnels Vector and the number of activeConnections is incremented.
> The last method in Listing 3, cleanJTunnels(), checks the JTunnels Vector to see if any JTunnels are inactive (by calling the method isActive()). If so, it removes the JTunnel entry from the vector.

This text apparently indicates that the vector identified by the Examiner is employed to identify *tunnels*, not sockets. A tunnel involves the "'piping' of the output of one socket to the input of the other socket and vice versa" (page 1, next to last line), and is thus very different from a socket.

At best, Sagar-SYSCON *temporarily* identifies a socket on which a new connection request is received; JTServer then opens a new JTunnel and, if *anything* is registered, JTServer presumably registers the tunnel with the JTunnels vector (page 2, lines 37-39). Thus, Sagar-SYSCON does not teach or suggest the registration of multiple sockets with a polling module or polling of the sockets.

B.   Sagar-SYSCON Does Not Share a Thread for Polling Sockets

In claimed embodiments of the present invention, one thread is shared among a plurality of sockets (e.g., the sockets registered with a polling module or polltable) for polling those sockets.

In Sagar-SYSCON, threads are apparently dedicated to pipes, with each thread handling traffic going in one direction – from a client socket to a server socket, or vice versa (page 4, lines 1-11). Specifically, JTunnel starts each of the PipedSocketStream objects (one at each end of the pipe) in an independent thread (page 3, last paragraph). Thus, it appears that tunnels and sockets have dedicated threads; they do not share one.

C.   Sagar-SYSCON Does Not Associate Sockets with Event Consumers

In claimed embodiments of the present invention, sockets are associated with event consumers. Different event consumers may be associated with sockets for different purposes (e.g., for listening, for handling media streaming commands, for media quality control).

The Examiner cited data stream objects of Sagar-SYSCON as teaching this subject matter. However, Sagar-SYSCON specifically states that the PipedInputStream and PipedOutputStream classes are *stream*-based classes, not socket-based classes (page 2, lines 30-34). Thus, the data stream objects are associated with streams or perhaps pipes, *not* sockets.

IV.   Geagan-Blue-Coat-Systems (U.S. Patent No. 6,735,634)

Geagan is directed toward a Method for Real Time Protocol Media Recording (title). In particular, Geagan attempts to solve the problem of data loss incurred during downloading of streaming content (column 7, lines 45-47).

A.   Geagan Does Not Host Connections with Multiple Clients with One Socket

In a claimed embodiment of the present invention, one socket may be used (e.g., at a server that streams media) to host simultaneous connections to multiple clients. This is described in the carryover paragraph of pages 11-12 of the present application.

Two portions of Geagan were cited against this subject matter. The first (column 8, lines 50-67) addresses the general goal of Geagan and describes how a proxy is placed between a content source and one or more clients. There is no suggestion of using a single port on the proxy to stream the content to multiple clients simultaneously. Although the proxy may indeed stream data to multiple clients, text following the cited portion of Geagan appears to indicate that the clients are served in serial order, not simultaneously. A "shared" data stream may "be provided from the proxy to later requesting clients (column 9, line 8).

Even in a portion of Geagan in which multiple users are connected to the proxy (column 10, lines 1-16), there is no description of using a single socket to host simultaneous connections to multiple clients.

The second cited portion of Geagan (column 3, lines 34-48) appears unrelated to the

aspect of Applicants' invention against which it was asserted; it merely describes a portion of an RTSP session in which a media description is retrieved.

V.   Rueda-Telecom-Research-Laboratory (U.S. Publication 2002/0112076)

Rueda is directed toward an Internet Protocol-Based Computer Network Service (title). In particular, Rueda describes a service that allows computer to access IP-based services over a network even if not configured for the protocols of that network (Abstract).

A.   Rueda Requires Separate Threads for Different Sockets and Therefore Does Not Teach one to Share a Thread Among a Plurality of Sockets

In claimed embodiments of the invention, a single thread or a pool of threads may be shared among multiple sockets, multiple event consumers or multiple tasks. For example, one thread may be shared by a number of sockets registered with a polltable.

Rueda specifies that each socket receives a separate thread for handling activity on that socket (paragraph 0077). Even in the case of multiple network adapters it appears that separate threads are required for each socket. Applicant has reviewed Figure 7, Figure 29 and the text associated with Figure 29 (paragraphs 0250 through 0256), but no discussion of sharing a thread among a plurality of sockets was found. There is no mention of "individual agents" and nothing that contradicts the earlier discussion about using a separate thread for each socket.

Thus, Rueda teaches away from Applicant's invention.

VI.   Selected Claims

A.   Claims 1-10

Claim 1 recites the registration of a plurality of sockets with a polling module. As described in Section III.A above, Sagar-SYCON teaches one to use a vector to identify tunnels; there is no mention of registering individual sockets.

In addition, although Cathey-AT&T may *mention* the polling of sockets, there is no suggestion in Sagar-SYCON or Cathey-AT&T that one should register a plurality of sockets with a module configured to poll those sockets. Indeed, the vector of Sagar-SYCON is not configured to perform polling, it appears to be a list or other non-executable data structure.

Thus, the combination of Sagar-SYCON and Cathey-AT&T actually *teaches away* from claim 1 as written.

Claim 2 recites the registration of a second plurality of sockets and the sharing of a second thread among the second plurality of sockets. As described immediately above, Sagar-SYCON and Cathey-AT&T cannot teach this. In addition, Rueda-Telecom-Research-Laboratory also teaches away from this subject matter, as discussed in Section V.A.

Claim 8 recites the simultaneous hosting of connections with multiple clients. As described in Section IV.A, Geagan does not teach or suggest this.

B.   Claims 11-14

Applicants note that claims 11-14 were rejected without specific indications of how each element of the claims are taught or suggested by the cited references. Applicants therefore request the rejection of claims 11-14 be withdrawn.

In particular, no reference to the "notifying" actions recited in claims 11 and 14 could be found in paragraph 19 of the Office Action. The notifying actions involve notifying event consumers that are associated with sockets. However, as described in Section III.C, Sagar-SYSCON appears to associate "data streams" with pipes, not sockets.

Claims 11 and 14 specify that a registered socket is associated with an event consumer "configured to handle an event received at the registered socket." As described in Section III.A, Sagar-SYSCON does not register sockets. And, Section III.C describes how Sagar-SYSCON associates streams with pipes, not sockets. Therefore, Sagar-SYSCON does not associate sockets with "event consumers" that can handle events received at the sockets.

C.   Claims 16-23

Claim 16 recites a polltable comprising a registered set of sockets that are polled by a poll module. The Examiner did not identify which portion(s) of the 4 cited references teach the use of a polltable. Applicants therefore request the rejection of claim 16 be withdrawn.

However, as described above in Section III.A, Sagar-SYSCON teaches the use of a vector to identify tunnels. As described in Section III.B, Sagar-SYSCON specifies that one should use separate threads to handling each end of a pipe or tunnel; this teaches away from the

requirement in claim 16 that one thread is to be dedicated to polling the entire set of sockets registered with the polltable.
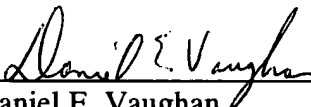
CONCLUSION

No new matter has been added with the preceding amendments. It is submitted that the application is in suitable condition for allowance. Such action is respectfully requested. If prosecution of this application may be facilitated through a telephone interview, the Examiner is invited to contact Applicant's attorney identified below.

Respectfully submitted,

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